

**REMARKS**

Claims 1, 3, 5-9 and 12-22 are all of the claims pending. Claim 13 is currently canceled.

Claims 17-22 are currently presented.

Claims 1, 3, 5-9 and 12-16 are rejected under 35 U.S.C. 103 (a) as being unpatentable over Levinson (U.S.5,019,769) in view of Glance (U.S. 4,916,705).

This rejection is respectfully traversed in view of the following discussion.

**I. THE CLAIMED INVENTION**

A feature of Applicant's invention, as disclosed and claimed, is directed to obtaining a differential value between the value of a current detected at a predetermined time and the value of current detected at a preceding predetermined time. This feature is important for *inter alia*, detecting an abnormality of an optical module with a simple circuit.

Further, Applicant's invention, as disclosed and claimed, is directed to the value of the detected current. That is, obtaining a differential value between the value of a current detected at a predetermined time and the value of current detected at a preceding predetermined time both times subsequent to an initial time when the optical device was new.

None of the references, including Levinson and Glance, discussed below, teaches or suggests such feature.

**II. THE PRIOR ART REJECTION**

The Examiner has rejected claims 1, 3, 5-9 and 12-16 under 35 U.S.C. 103 (a) as being unpatentable over Levinson (U.S. 5,019,769; hereinafter “Levinson”) in view of Glance (U.S. 4,916,705; hereinafter “Glance”).

Applicant respectfully submits that Levinson in view of Glance fail to teach or suggest all of the recitations of independent claims 1 including obtaining a differential value between the value of a current detected at a predetermined time and the value of current detected at a preceding predetermined time both values being subsequent to a first value.

### **The Levinson Reference**

Levinson discloses a laser diode controller 162 that measures the current flowing through the emitter of a transistor 182 (e.g., col. / lines : 5 / 1-14 ; Fig. 5). In particular, when the controller finds that drive current required for generating a predetermined level of optical output power exceeds the original level of drive current needed when the device was new by a predefined percentage (e.g., ten percent), after compensating for any temperature differences between the measurements being compared, failure of the device is imminent and the controller 162 will generate a warning message (col. / lines : 9 / 6-14 ).

Levinson fails to teach or suggest, however, obtaining a simple differential value between the value of a current detected at a predetermined time and the value of current detected at a preceding predetermined time. Instead, Levinson uses the drive current exceeding the original level of drive current in percentage. Obtaining percentage requires more complicated circuit than simply obtaining a differential value.

With respect to claim 8, the examiner has stated [i]t would have been obvious to one of ordinary skill in the art at the time of invention to add a update and store feature similar to Glance's in the system of Levinson. One is motivated as such since this is a well-known technique for establishing close loop control of a parameter (Office Action Page / lines from the bottom: 3 / 1-4). Applicant, however, disagrees with this explanation, since Levinson fails to teach or suggest establishing close loop control of a parameter. Thus, applicant respectfully request the examiner to reconsider this rejection.

### **The Glance Reference**

Glance discloses that, since the laser free-running frequency is not at the desired local oscillator frequency, the feedback loop produces an error signal on the lead 61. On a lead 89, an active integrator 70 produces an incremental laser bias current or control signal error which is applied to another input of the adder 82. This incremental laser bias current or control signal error is added to the initially selected laser bias current or control signal and is applied through the resistors 83 and 84 to the laser 51 driving its free-running frequency to oscillate at the desired local oscillator frequency, e.g.,  $f_{l1}$  (Col / lines: 5 / 31-43).

Glance fails to teach or suggest, however, obtaining a differential value between the value of a current detected at a predetermined time and the value of current detected at a preceding predetermined time both times after a first time. Instead, Glance produces an incremental laser bias current and adds it to the initially selected laser bias current to obtain the desired local oscillator frequency.

Further, Glance fails to show motivation to modify producing an incremental laser bias current. Namely, Glance fails to show a need for change from “producing an incremental laser bias current” to “detecting current”, because active integrator 70 in Glance does not need to detect an incremental laser bias current, as active integrator 70 by itself, produces an incremental laser bias current (i.e., active integrator 70 knows the incremental laser bias current).

Further, Glance fails to teach or suggest use of an additional bias current for detecting an abnormality of an optical module. Glance discloses producing an incremental laser bias current and adds it to the initially selected laser bias current to obtain the desired local oscillator frequency.

#### **The Personal Knowledge of the Examiner**

The examiner has stated [r]e claim 6, Levinson does not disclose wherein the value of the current held in the memory is overwritten to the value of the current that is newly detected in the specified spot when a differential value is obtained. However it would have been obvious to one of ordinary skill in the art at the time of invention to overwrite old data in memory to conserve on the use of memory where intermediate data points are not needed. Furthermore, this technique is extremely well known in the art (Office Action Page / lines from the bottom : 4 / 1-6).

Applicant believes that it would not have been obvious to one of ordinary skill in the art at the time of invention to overwrite data as setforth in the claimed combination.

37 CFR§1.104 (c)(2) indicates that, “In rejecting claims for want of novelty or for obviousness, the examiner must cite the best references at his or her command. When a reference

is complex or shows or describes inventions other than that claimed by the applicant, the particular part relied on must be designated as nearly as practicable. The pertinence of each reference, if not apparent, must be clearly explained and each rejected claim specified.” Thus, Applicant respectfully requests the examiner to show the reference. Please also see 37 CFR§1.104 (d)(2).

Based on the foregoing reasons, Applicant submits that Levinson in view of Glance fails to teach or suggest all of the claimed elements in claim 1. In addition, Glance fails to show motivation of modification. Thus, Applicant submits that claim 1 is allowable, and further submits that 3, 5-7 and 17 are allowable as well, at least by virtue of their dependency from claim 1. Applicant respectfully requests that the Patent Office reconsider and withdraw the §103(a) rejections of claims 1, 3, 5-7.

With respect to independent claims 9, 18, 19, 21 and 22, Applicant submits that claims 9, 18, 19, 21 and 22 are allowable for at least reasons analogous to those discussed for claim 1. Thus, Applicant submits that claims 9, 18, 19, 21 and 22 are allowable, and further submits that claims 12, 14, 15 and 20 are allowable as well, at least by virtue of their dependency from claim 9. Therefore Applicant respectfully requests that the Patent Office reconsider and withdraw the §103(a) rejection of claims 9, 12, 14, 15 18, 19, 20, 21 and 22.

With respect to independent claims 8 and 16, Applicant submits that Levinson in view of Glance fails to teach or suggest all of the claimed elements in claim 8 and 16; for example the taking of a ratio based on current measurements taken a times later than the startup time when the laser diode is new. Thus, Applicant submits that claim 1 is allowable. Applicant respectfully

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requests that the Patent Office reconsider and withdraw the §103(a) rejections of claims 8 and 16.

### **III. CONCLUSION**

In view of the foregoing, Applicant submits that Claims 1, 3, 5-9, 12, 14-16 and 18-22 all the claims presently pending in the application are patentably distinct over the prior art of record and are in condition for allowance. The Examiner is respectfully requested to pass the above application to issue at the earliest possible time.

The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

Respectfully submitted,

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